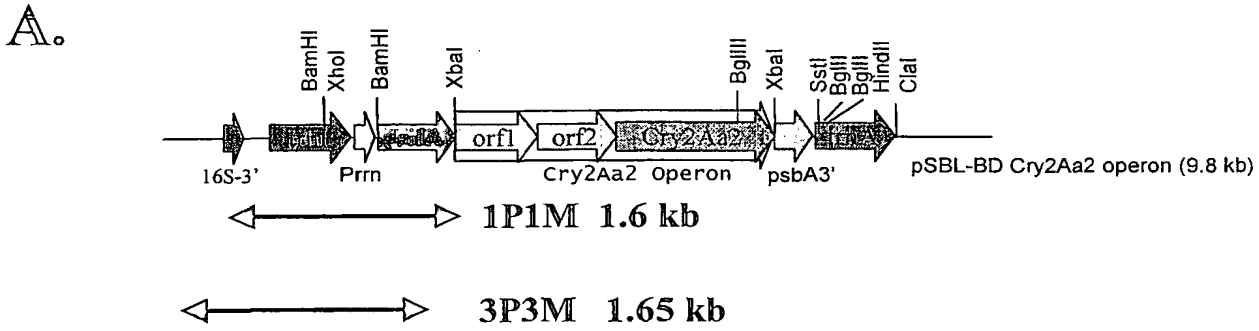
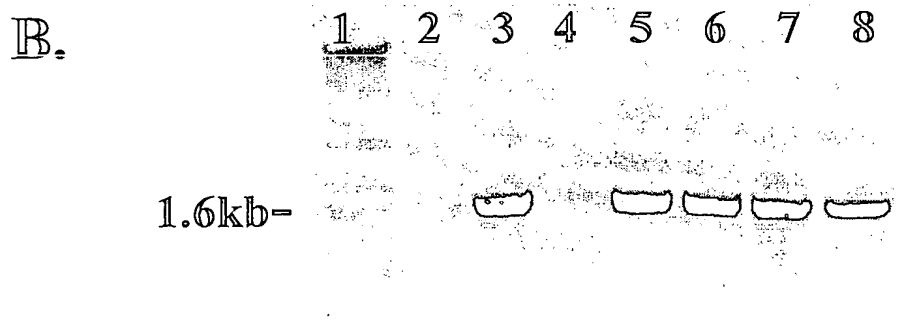

A.
BamHI
XhoI
BamHI
XbaI
BglIII
XbaI
SstI
BglII
BglII
HindIII
ClaI
orf1
orf2
Cry2Aa2
16S-3'
Prrn
Cry2Aa2 Operon
psbA3'
pSBL-BD Cry2Aa2 operon (9.8 kb)
1P1M 1.6 kb
3P3M 1.65 kb


B.
1 2 3 4 5 6 7 8
1.6kb-

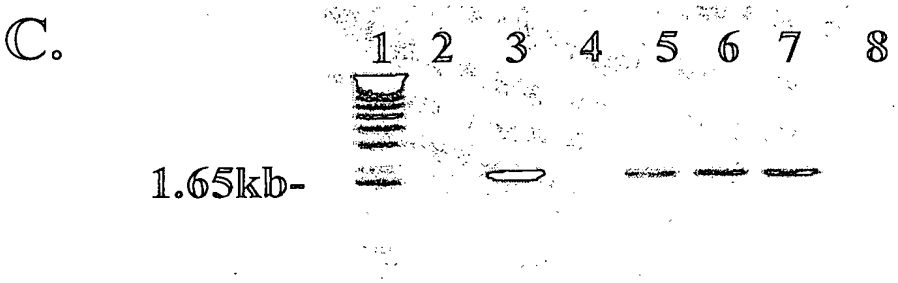
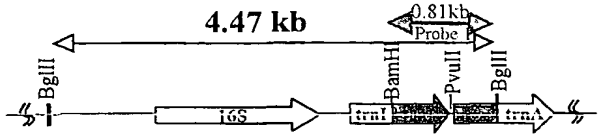
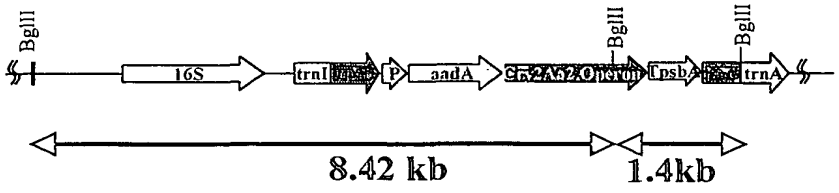

C.
1 2 3 4 5 6 7 8
1.65kb-

Figure 1

A.


4.47 kb
0.81kb
Probe
BglII
BamHI
PvuII
BglII
16S
trnI
trnA

B.


BglII
16S
trnI
P
aadA
psb
trnA
BglII
BglII
8.42 kb
1.4kb

C.

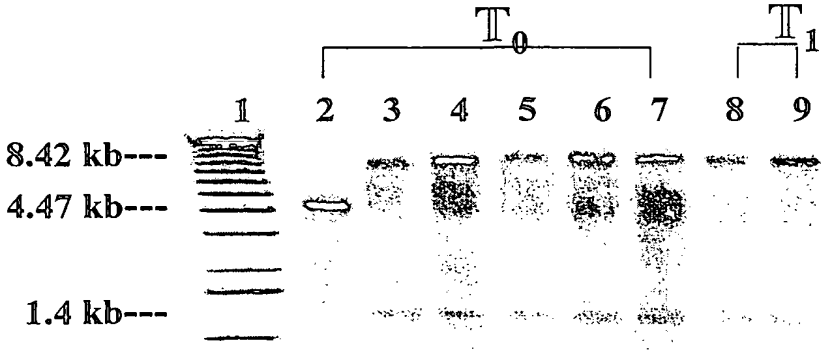

T0
T1
1
2
3
4
5
6
7
8
9
8.42 kb---
4.47 kb---
1.4 kb---

Figure 2

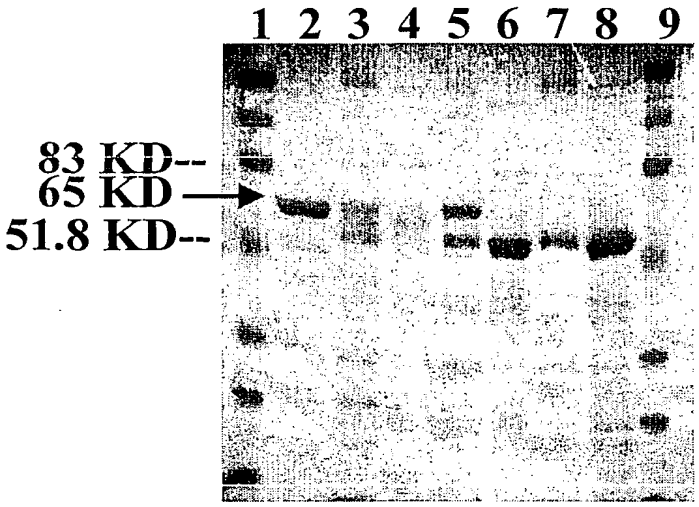
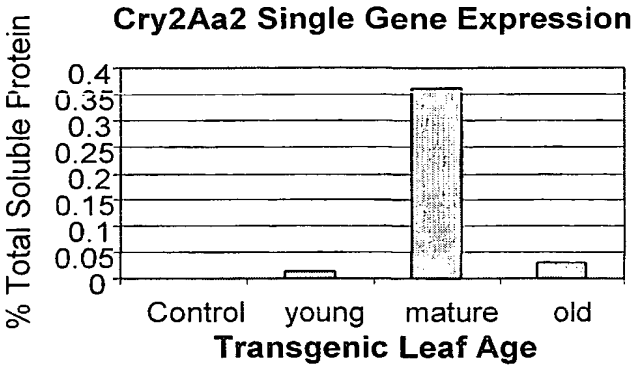


Figure 3

A.


Cry2Aa2 Single Gene Expression
% Total Soluble Protein
0.4
0.35
0.3
0.25
0.2
0.15
0.1
0.05
0
Control
young
mature
old
Transgenic Leaf Age

B.

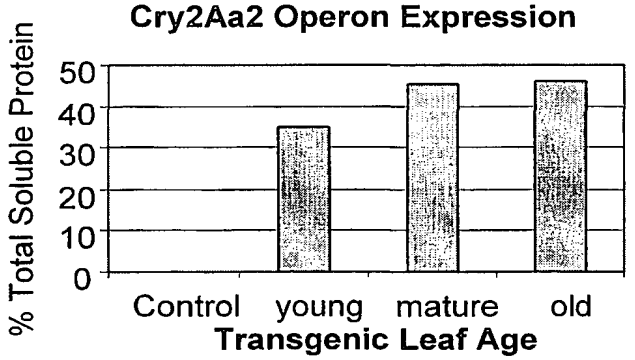

Cry2Aa2 Operon Expression
% Total Soluble Protein
50
40
30
20
10
0
Control
young
mature
old
Transgenic Leaf Age

Figure 4

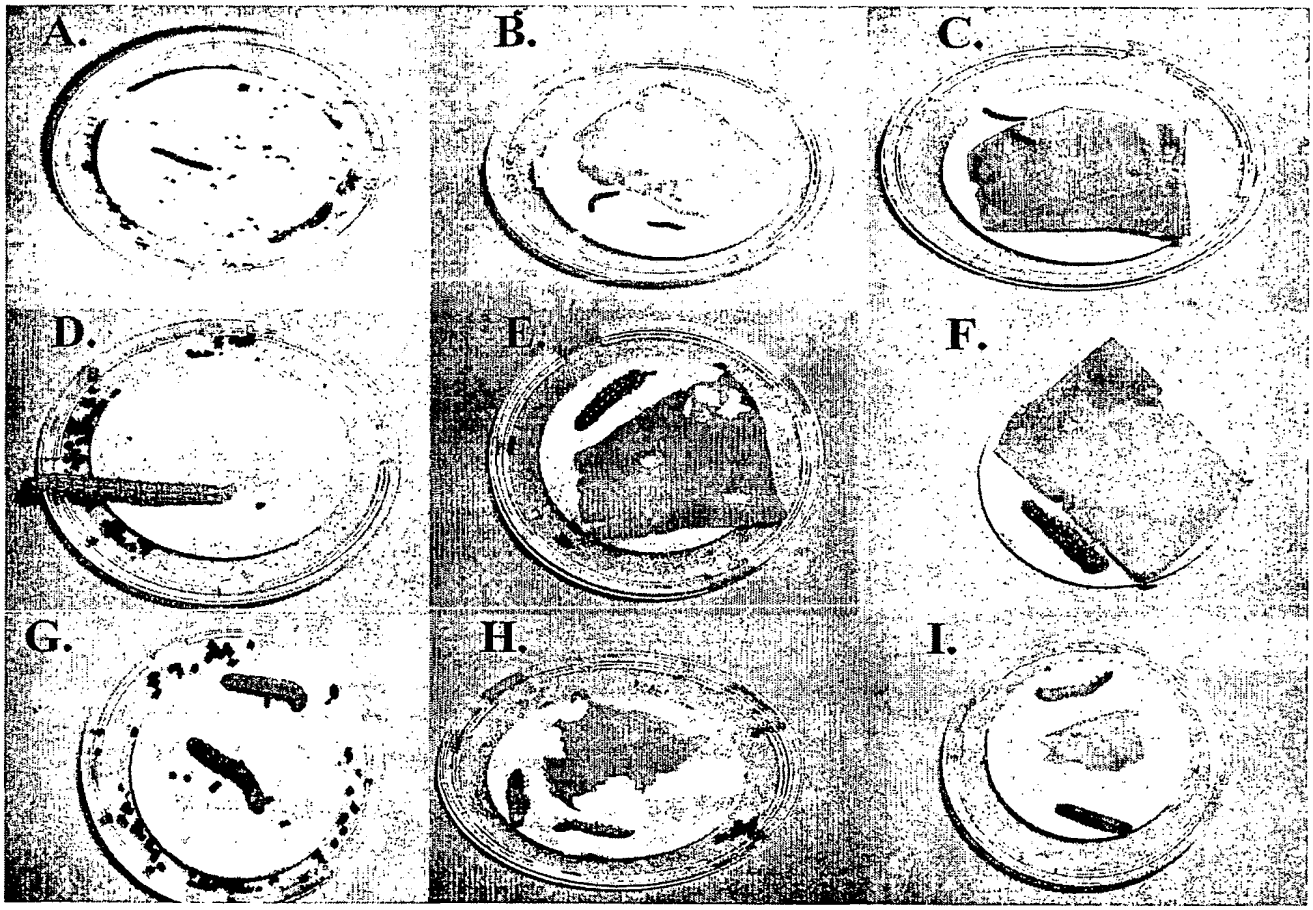


Figure 5

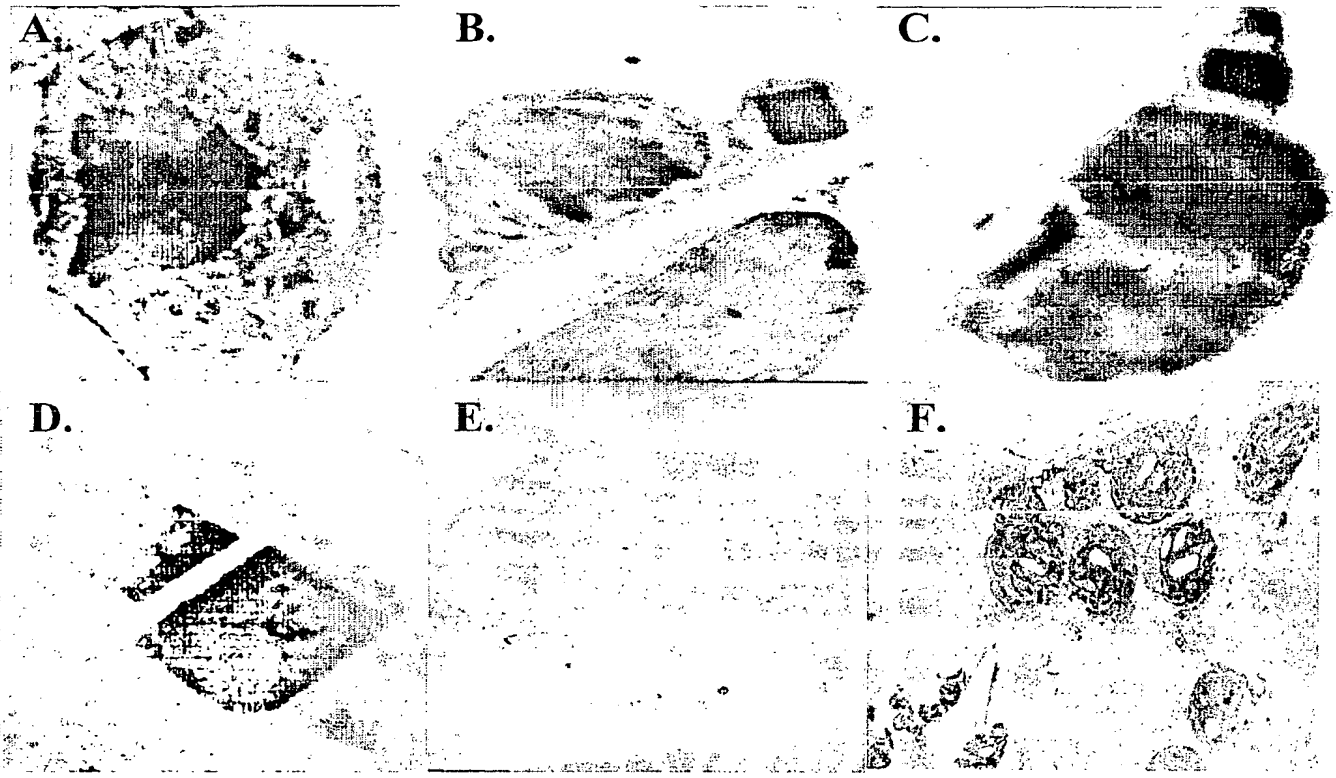


Figure 6

Figure 7

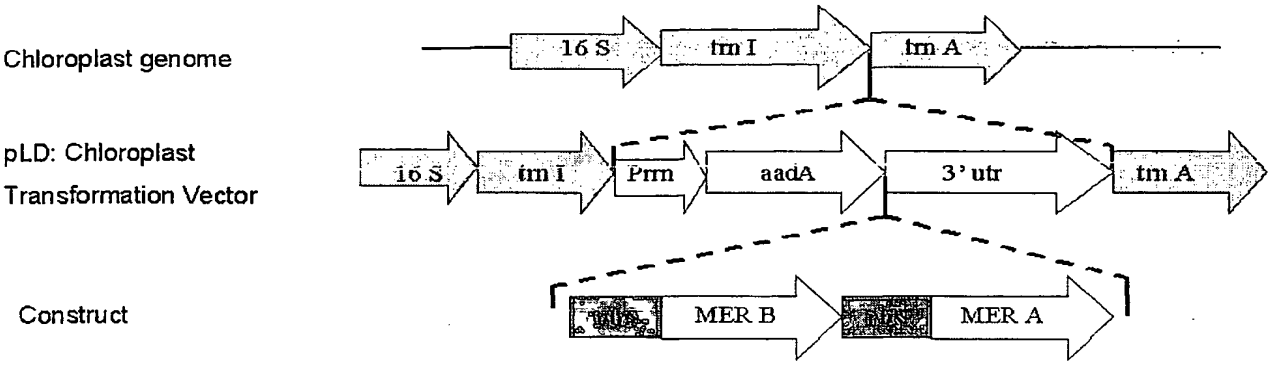
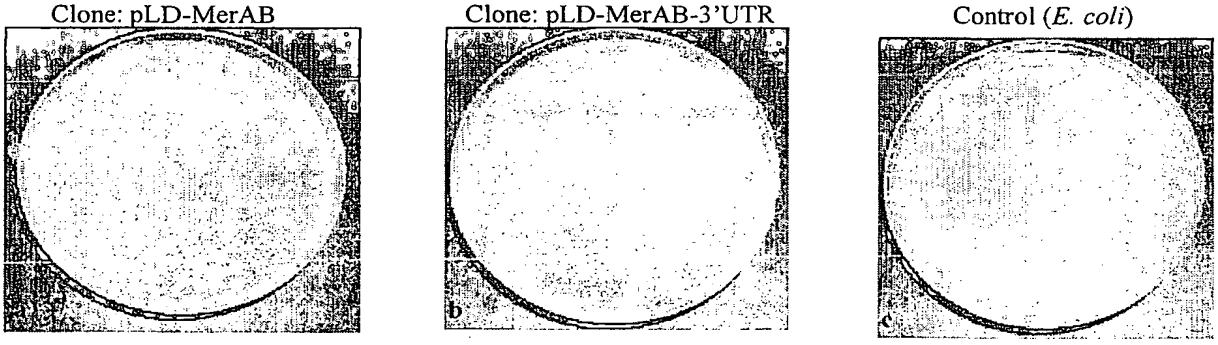


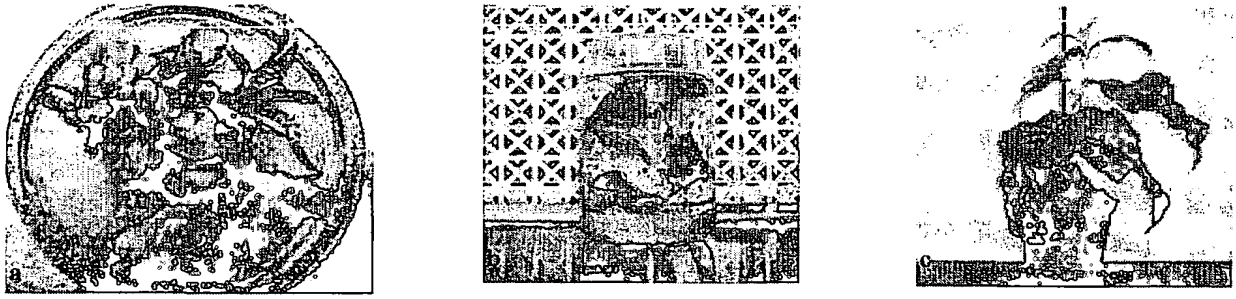
Figure 8

Fig. 9: Transformed E. coli grown in 100 μm $HgCl_2$



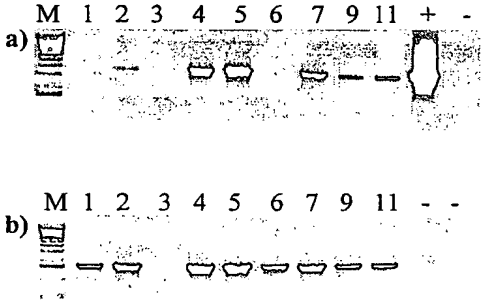
Transformed E. coli cells containing the vectors pLD-merAB and pLD-MerAB-3'UTR grown in LB at different concentrations of $HgCl_2$. Plates show transformed cells growing at 100 μM $HgCl_2$. No growth was observed in the control.

Fig. 10: Chloroplast Transgenic plants



a) Transgenic plant shoot induction in RMOP with 500μg/ml Spec. **b)** Transgenic plant root induction in MSO with 500 μg/ml Spec. **c)** Transgenic plant grown in soil.

Fig. 11: Integration of the mer operon into the chloroplast genome



a) PCR using specific primers that land in the gene cassette (5P/2M) show a product of 3.8kb size (clones2, 4, 5, 7, 9, 11). Clones 1 and 3 show no integration of the cassette. Positive control, is plasmid pLD-merAB-3'UTR. Negative control is untransformed plant DNA. b) PCR using specific primers that land within the native chloroplast genome (3P/3M), eliminate mutants (clone 3), showing integration of the cassette into the chloroplast genome (clones: 1, 2, 4, 5, 6, 7,9, 11. 1.6 kb PCR product).

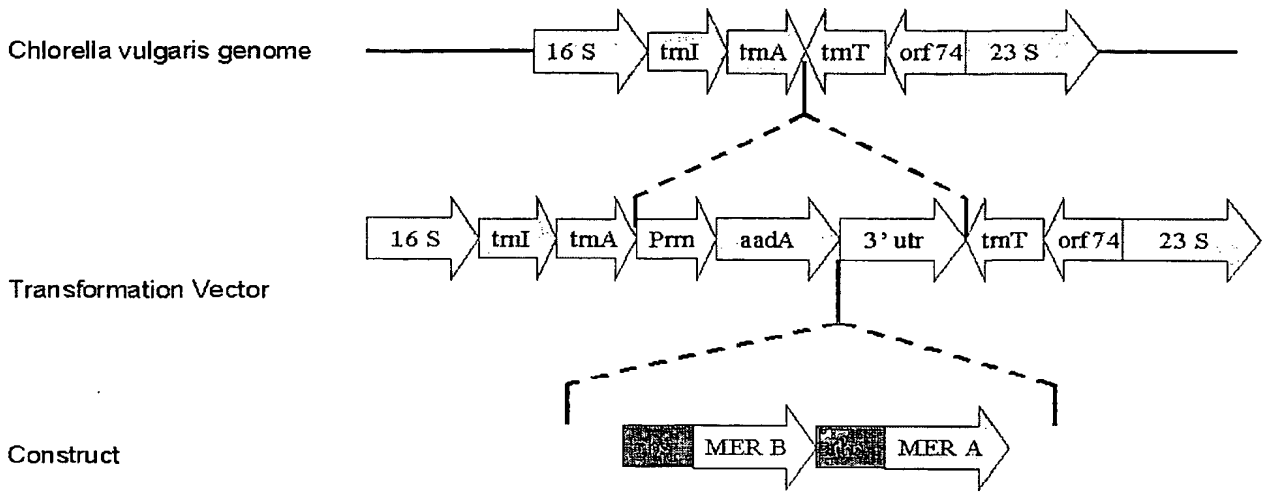


Figure 12

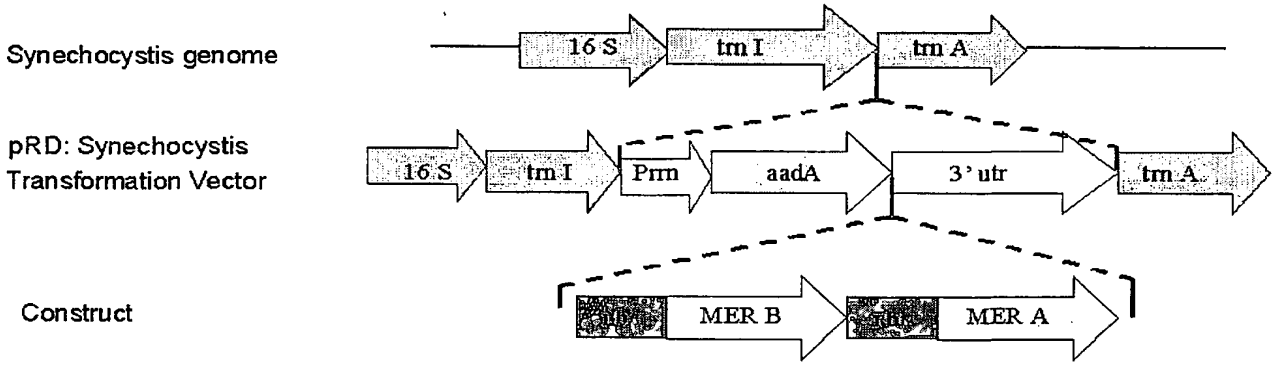


Figure 13

Plastid vector Construction of Lemna

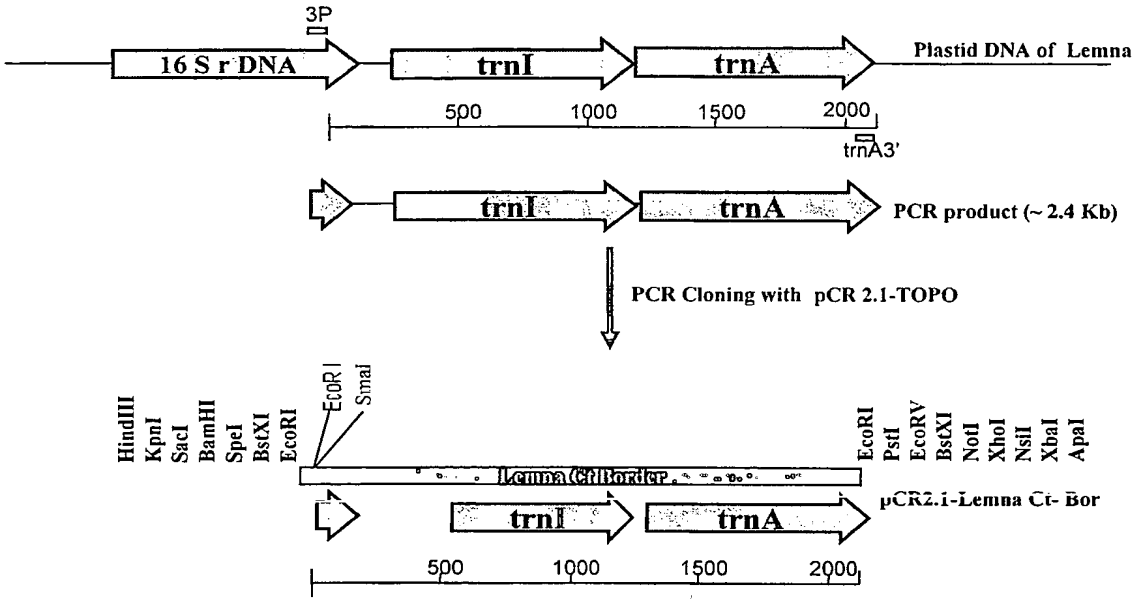


FIGURE 14

Plastid vector Construction of Sugarcane

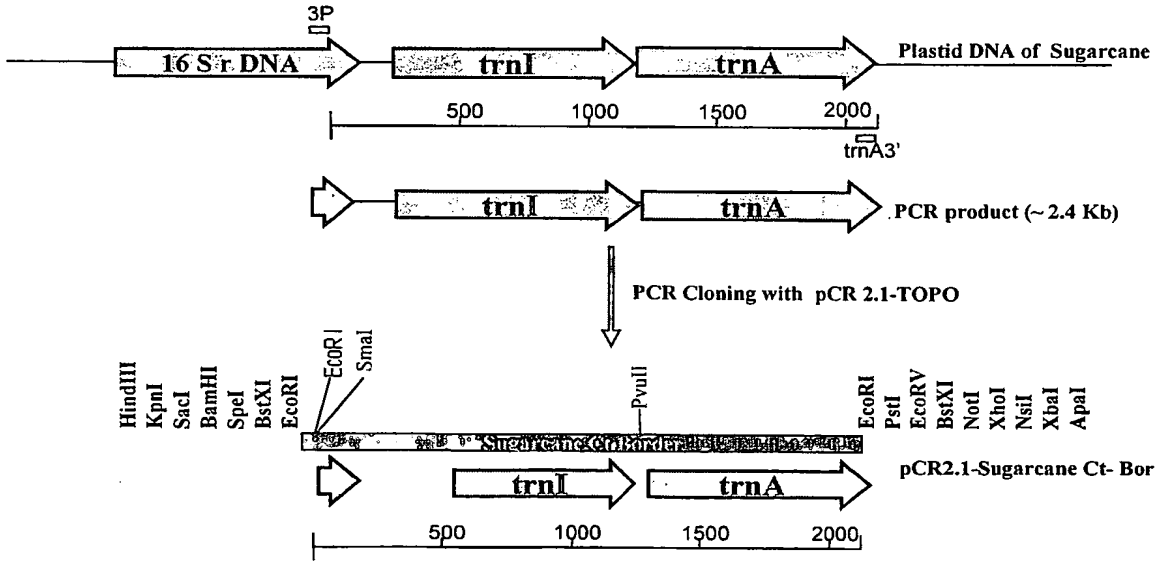


FIGURE 15

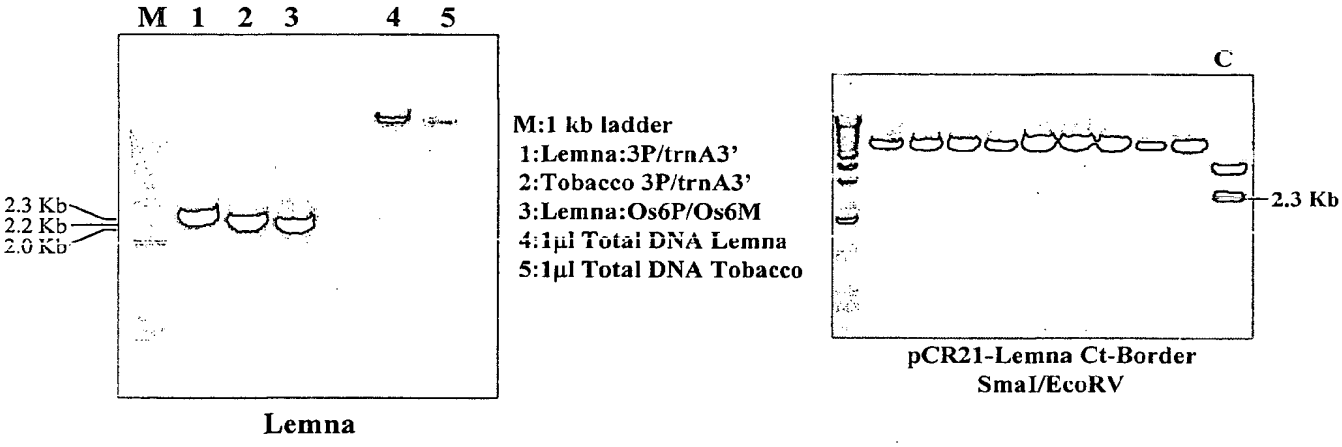
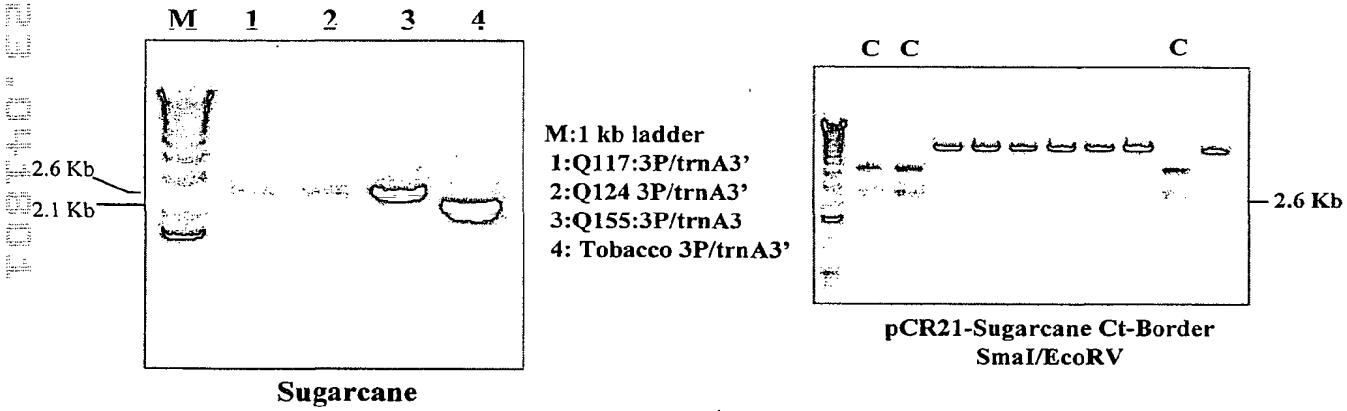


FIGURE 16



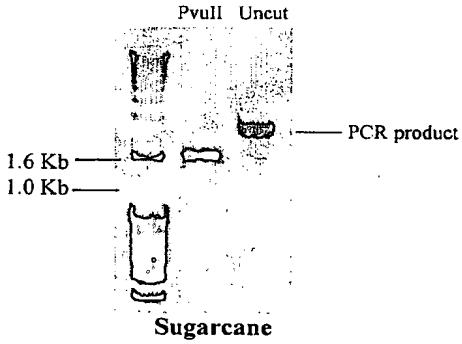


FIGURE 17

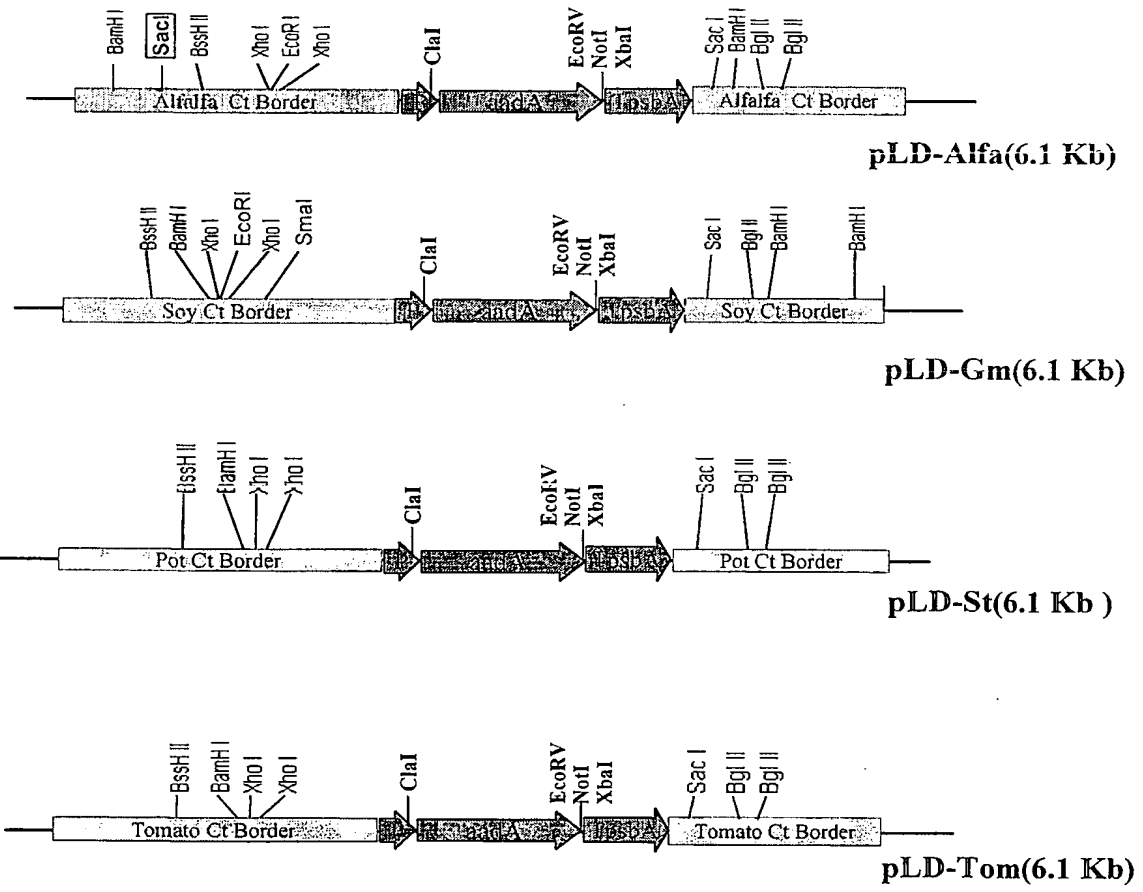
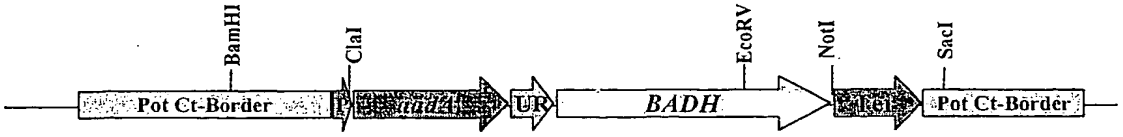
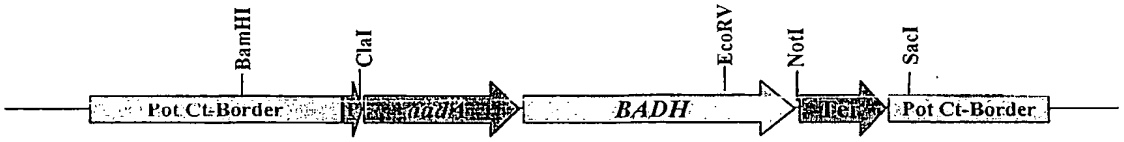

BamH I
SacI
BssH II
Xho I
EcoR I
Xho I
ClaI
EcoRV
NotI
XbaI
Sac I
BamH I
Bgl II
Bgl II
Alfalfa Ct Border
aadA
TpsbA
Alfalfa Ct Border
pLD-Alfa(6.1 Kb)
BssH II
BamH I
Xho I
EcoRI
Xho I
SmaI
ClaI
EcoRV
NotI
XbaI
Sac I
Bgl II
BamH I
BamH I
Soy Ct Border
aadA
TpsbA
Soy Ct Border
pLD-Gm(6.1 Kb)
BssH II
BamH I
Xho I
Xho I
ClaI
EcoRV
NotI
XbaI
Sac I
Bgl II
Bgl II
Pot Ct Border
aadA
TpsbA
Pot Ct Border
pLD-St(6.1 Kb)
BssH II
BamH I
Xho I
Xho I
ClaI
EcoRV
NotI
XbaI
Sac I
Bgl II
Bgl II
Tomato Ct Border
aadA
TpsbA
Tomato Ct Border
pLD-Tom(6.1 Kb)

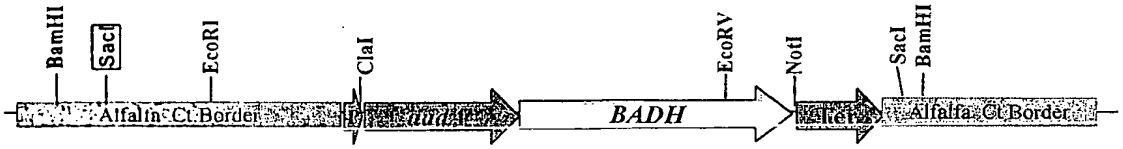
FIGURE 18(A)



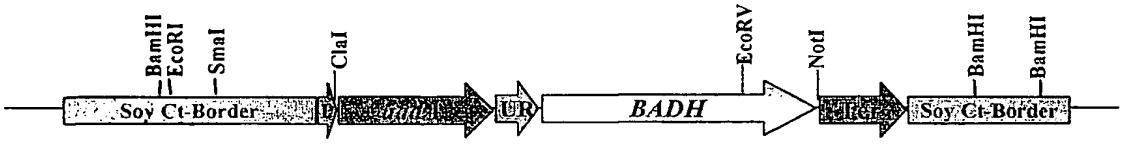
pLD-St-utrBADH(7.5kb)



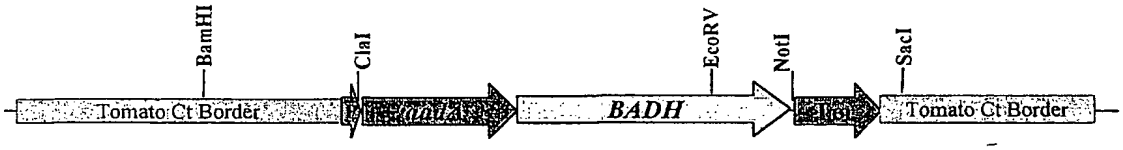
pLD-St-BADH(7.3kb)



pLD-Alfa-BADH(7.3kb)



pLD-Gm-utrBADH(7.5kb)



pLD-Tom-BADH(7.3kb)

FIGURE 18(B)